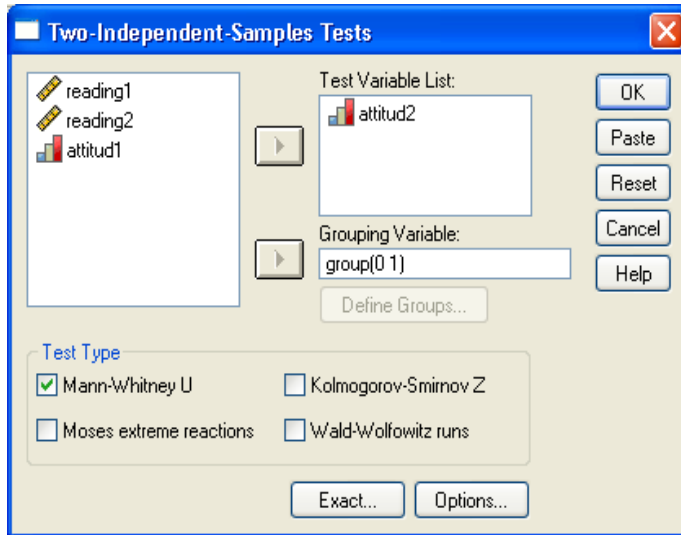


Answers to Exercise 6.10 (p. 225)

In relation to the attitudes to reading measure, 'attitud2', as it is an ordinal measure and we're comparing two groups of a nominal variable ('group') then we need to run a Mann-Whitney Test. This can be done using the **Analyze** → **Nonparametric Tests** → **2 Independent Samples...** as shown below:



The output you should get from this is as below. As can be seen, a statistically significant difference was found between the two groups ($p=0.010$, Mann Whitney $U = 282.0$, $Z = 2.587$).

Mann-Whitney Test

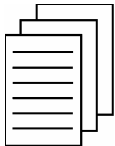
Ranks

	Type of After-School	N	Mean Rank	Sum of Ranks
'How much do you like reading?' (Post-Test)	Reading Group (Control)	30	24.90	747.00
	Reading and Drama Group (Treatment)	30	36.10	1083.00
	Total	60		

Test Statistics^a

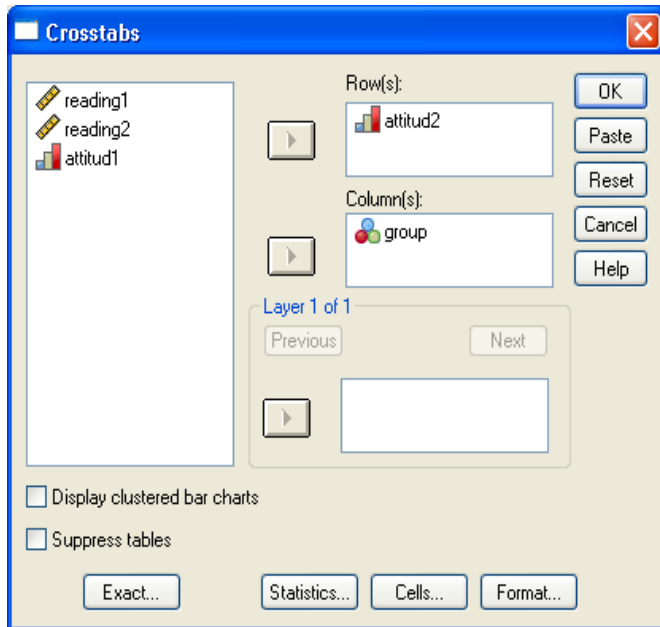
	'How much do you like reading?' (Post-Test)
Mann-Whitney U	282.000
Wilcoxon W	747.000
Z	-2.587
Asymp. Sig. (2-tailed)	.010

a. Grouping Variable: Type of After-School Group



Photocopiable Resource

To obtain the actual descriptive statistics to report you would use the **Analyze** → **Descriptive Statistics** → **Crosstabs...** procedure as below and with Column Percentages selected:

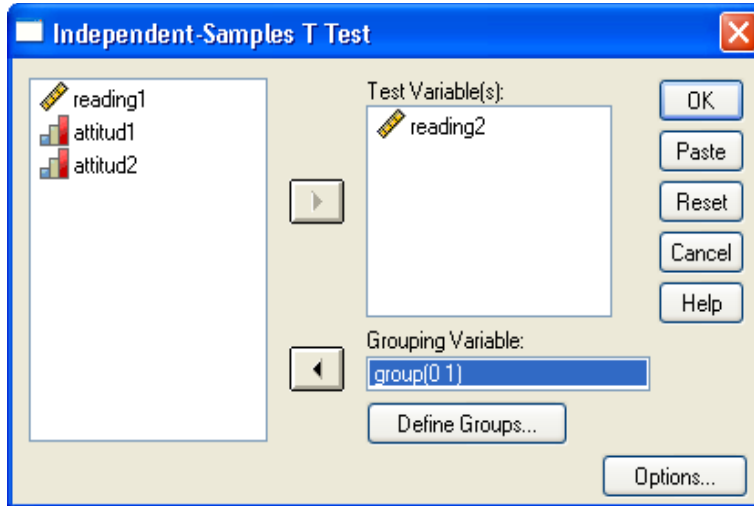


This, in turn, should give you the following output where you can draw out comparisons such as 40% of the Reading Club stating they liked reading either 'quite a lot' or 'a lot' after taking part in the club for a year compared to 73.4 per cent of the Reading and Drama Club.

'How much do you like reading?' (Post-Test) * Type of After-School Group Crosstabulation

			Type of After-School Group		Total
			Reading Group (Control)	Reading and Drama Group (Treatment)	
'How much do you like reading?' (Post-Test)	Not at all	Count % within Type of After-School Group	0 .0%	2 6.7%	2 3.3%
	Not very much	Count % within Type of After-School Group	9 30.0%	3 10.0%	12 20.0%
	A little	Count % within Type of After-School Group	9 30.0%	3 10.0%	12 20.0%
	Quite a lot	Count % within Type of After-School Group	6 20.0%	5 16.7%	11 18.3%
	A lot	Count % within Type of After-School Group	6 20.0%	17 56.7%	23 38.3%
Total	Count % within Type of After-School Group	30 100.0%	30 100.0%	60 100.0%	

In relation to the reading score measure, as 'reading2' is a scale measure and we're comparing two groups of a nominal variable ('group') then we need to run an independent t-test. We have already ascertained that the conditions required to run such a test have been met so we can move straight onto running the **Analyze** → **Compare Means** → **Independent Samples T-Test...** procedure as shown below:



The output you should get from this is as below. As can be seen, a statistically significant difference was found between the two groups ($p < 0.0010$, $t = 5$, $Z = 2.587$).

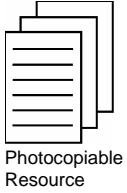
T-Test

Group Statistics

Type of After-School Group	N	Mean	Std. Deviation	Std. Error Mean
Reading Scores (Post-Test) Reading Group (Control)	30	50.37	10.578	1.931
Reading and Drama Group (Treatment)	30	65.70	12.140	2.217

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Reading Scores (Post-Test)	Equal variances assumed	.888	.350	-5.216	58	.000	-15.333	2.940	-21.218	-9.449
	Equal variances not assumed			-5.216	56.933	.000	-15.333	2.940	-21.220	-9.446



Finally, to get the actual figures to report you need to first use the **Data → Split File...** procedure to organize your output by the variable 'group' and then to use the **Analyze → Descriptive Statistics → Descriptives...** procedure to produce summary statistics for the variable 'reading2'. The resultant output should be as below:

Type of After-School Group = Reading Group (Control)

Descriptive Statistics^a

	N	Minimum	Maximum	Mean	Std. Deviation
Reading Scores (Post-Test)	30	25	69	50.37	10.578
Valid N (listwise)	30				

a. Type of After-School Group = Reading Group (Control)

Type of After-School Group = Reading and Drama Group (Treatment)

Descriptive Statistics^a

	N	Minimum	Maximum	Mean	Std. Deviation
Reading Scores (Post-Test)	30	43	90	65.70	12.140
Valid N (listwise)	30				

a. Type of After-School Group = Reading and Drama Group (Treatment)

As can be seen, after a year of participating in the Reading Club, the children achieved a mean score on the standardized reading test of 50.4 (sd=10.6) while those in the Reading and Drama Club achieved a mean score of 65.7 (sd=12.1).